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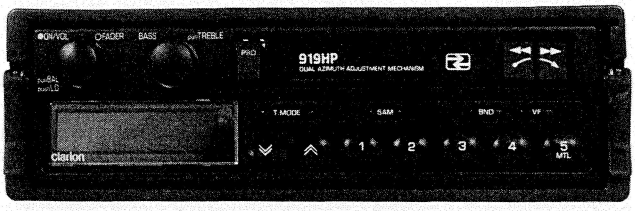
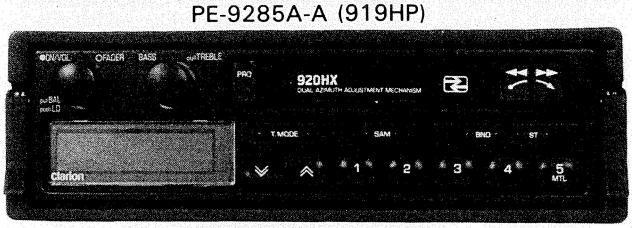
clarion Service Manual

Published by Service Administration Section



PE-9285A-A (919HP)



PE-9286A-A (920HX)

UKW•MPX/MW/LW RADIO CASSETTE COMBINATION

919HP Model (PE-9285A-A)

920HX Model (PE-9286A-A)

■ SPECIFICATIONS:

Radio Section

Circuit system:	Superheterodyne
Tuning system:	Electronic tuning
Receiving frequency:	LW 153kHz to 281kHz
	MW 531kHz to 1602kHz
	UKW (FM) 87.5MHz to 108MHz
Intermediate frequency:	LW, MW 459kHz
	UKW (FM) 10.7MHz

Tape Section

Reproduction:	Auto reversing 4 track, 2 channel stereo cassette tape playback
Tape speed:	4.76cm/sec (1-7/8 ips)

Composite

Load impedance:	4Ω×2
Power output:	20W×2
Power supply voltage:	DC 14.4V (10.8 to 15.6V)
	Negative ground
Power consumption:	Less than 5A (at max. output)
Dimensions:	Width 172mm
	Height 48mm
	Depth 160mm
Weight:	1.8kg

■ COMPONENTS:

• 919HP (PE-9285A-A)

Main unit		1
Mounting bracket	300-6954-00	1
Extension lead	852-9213-10	1
Parts bag	921-8462-00	1
Spacer	345-3653-01	1
Tap screw	700-5016-80	1
Hex nut	723-5000-21	1
Plate nut	725-0216-00	1
Flat washer	740-5000-10	1

• 920HX (PE-9286A-A)

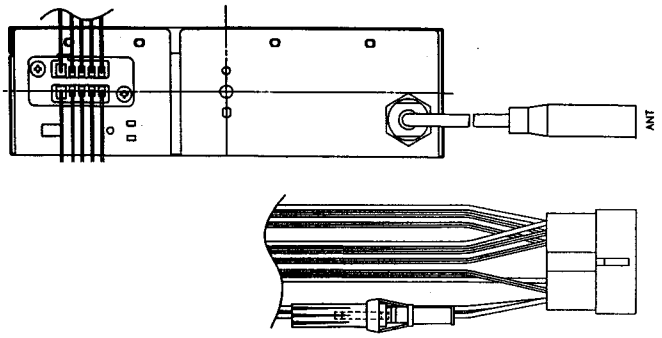
Main unit		1
Mounting bracket	300-6954-00	1
Extension lead	854-0702-00	1
Parts bag	921-8462-00	1
Spacer	345-3653-01	1
Tap screw	700-5016-80	1
Hex nut	723-5000-21	1
Plate nut	725-0216-00	1
Flat washer	740-5000-10	1

■ FEATURES:

- SAM.....Signal Auto Memory
- 2-Way SEEK/SCAN & Manual
- SASC II & CZ1 .....Signal Actuated Stereo Control
- TAKE AWAY (Unit with Slide Out Bracket)
- MTL, LOUDNESS, FADER, BASS/TREBLE
- Night Illumination

■ REARVIEW AND CONNECTORS:

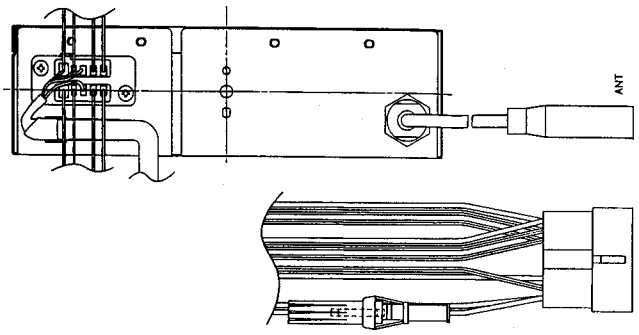
◎ 919HP (PE-9285A-A)

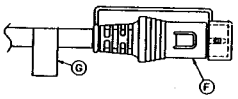


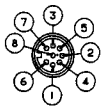
E	J
D	I
C	H
	G
B	
A	F

No.	REMARK	COLOR
A	ACC	BLUE
B	AUTO ANT.	BLUE/YELLOW
C	R-L-SP (−)	WHITE/GREEN
D	L-SP C	WHITE/BLACK
E	F-L-SP (+)	WHITE
F	PERMANENT	RED
G	GROUND	BLACK
H	R-R-SP (−)	GRAY/GREEN
I	R-SP C	GRAY/BLACK
J	F-R-SP (+)	GRAY

◎ 920HX (PE-9286A-A)







No.	COLOR
1	L
2	Sig GND
3	—
4	R
5	—
6	—
7	—
8	REMO

E	J
D	I
	G
B	
A	F

No.	REMARK	COLOR
A	ACC	BLUE
B	AUTO ANT.	BLUE/YELLOW
D	L-SP (−)	WHITE/BLACK
E	L-SP (+)	WHITE
F	PERMANENT	RED
G	GROUND	BLACK
I	R-SP (−)	GRAY/BLACK
J	R-SP (+)	GRAY

■ ADJUSTMENT:

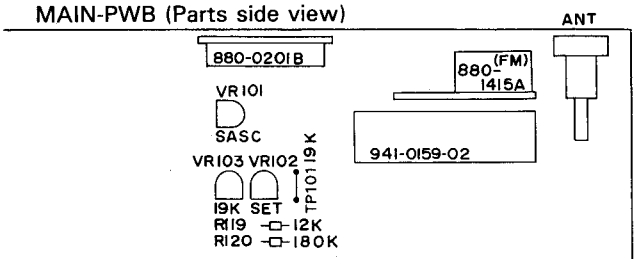
Adjustment item	Adjustment point	Procedure
SASC	VR101	1. Tune at 98.1MHz, input a 65dB, 7kHz modulation frequency, 30% modulation degree SSG signal, and then turn on ST. SW. 2. Adjust the output level of the volume controller to 0dBm (0.775V). 3. Set the SSG output to 38dB and adjust VR101 so that the output level is −2dB.
MPX Separation	VR102	1. Tune at 98.1MHz, connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR102 so that the maximum separation is obtained.
DK VCO (919HP)	VR301 (880-0201B)	1. Tune at 98.1MHz, input a 55dB 10% modulated SSG signal, and turn on VF. SW. 2. Connect the frequency counter to TP and adjust VR301 so that the counter indicates 125Hz. In the case.
DK level (919HP)	VR506 (VOL PWB)	1. Tune at 98.1MHz 100% (Main + PL + DK + SK + BK) modulated SSG signal, and turn on VF. SW. 2. At the time of minimum sound volume, adjust VR506 to make the speaker output 0.775V.
19K	VR103	1. With SG98.1MHz input 55dB, set the pilot to OFF. 2. Connect frequency counter to IC101 24-pin, and drop 23-pin TP102 to the earth (GND with R120). 3. Make adjustment to set 19k ± 50Hz by VR103. (After adjustment set the pilot to ON.)

[NOTE] After the adjustment of frequency range, be sure that;
(1) Band edge frequency of LW shall be 148.5kHz −20kHz
(2) Band edge frequency of UKW shall be 87.5MHz +100kHz −160kHz
at low end. And shall be lower than 108.16MHz at upper end.

• SPECIFICATION — LIMIT —
Quieting sensitivity:
MW Less than 33dB (at 20dB S/N)
LW Less than 40dB (at 20dB S/N)
UKW Less than 12dB (at 30dB S/N)
Stereo separation:
UKW More than 20dB

• ADJUSTMENT POINT

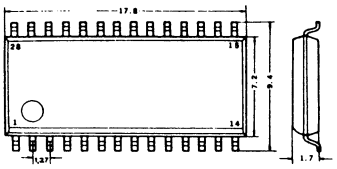
MAIN-PWB (Parts side view)



■ EXPLANATION OF IC:

■AN7465S 051-0987-00 FM MPX Stereo Demodulator

Outward Form



Absolute Maximum Ratings (Ta=25°C)

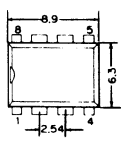
Supply Voltage	Vcc	10V
Lamp Drive Current	I_O	30mA
Power Dissipation	P_O	520mW

Explanation of Terminals

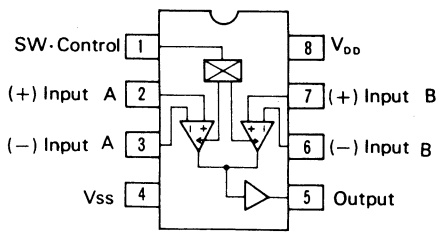
No	Function
1	Low pass filter for noise AMP
2	Low pass filter for noise AMP
3	Constant at time applying AGC voltage
4	Constant at time of gate pulse width
5	Signal holding capacitor
6	FM noise suppressing circuit signal output
7	FM stereo MPX demodulator signal input
8	ATC low-pass filter
9	Resistor for adjusting the separation degree
10	Sound tone control terminal
11	Separation degree control terminal
12	Left channel output
13	Right channel output
14	Forced monoaural VCO stop terminal
15	Pilot signal detection low pass filter
16	Pilot signal detection low pass filter
17	Stereo lamp driver
18	Ground
19	PLL low-pass filter
20	PLL low-pass filter
21	Connect VCO oscillating CR
22	Pycan control low pass filter
23	Pycan control low pass filter
24	Pycan negating wave generation capacitor
25	Vcc
26	Signal input
27	High-pass filter control
28	Vref (standard voltage)

■M5201P 051-0853-00 Switch OP Amp (2 Input 1 Output)

Outward Form



Block Diagram

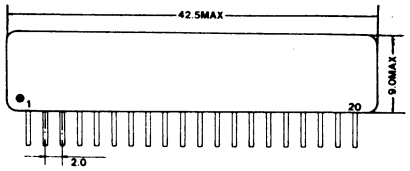


Outline

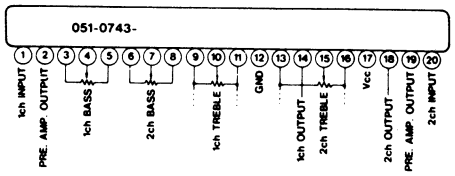
This IC is an operation amplifier provided with an analog switch function. It has 2-system inputs (A and B) and 1 output. It has 2 input differential circuit systems (A and B), 1 output circuit system and a switch circuit incorporated. By externally setting a control terminal to H/L, either input A or B is turned on, thus enabling operation similarly as conventional operation amplifiers. Under a voltage follower condition of Gv=0dB, it works as just an analog switch. It is also possible to independently set gains for A and B as a switch function plus an amplifier.

■BASS-TRE-MIX 051-0743-70

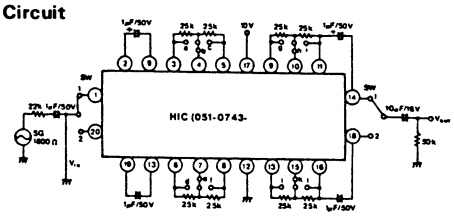
Outwarm



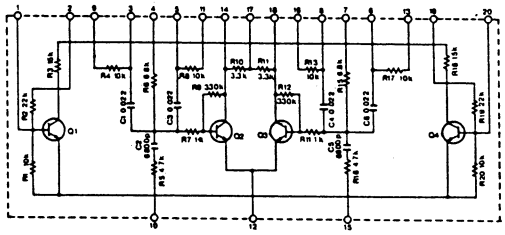
Terminal Connection



Test Circuit

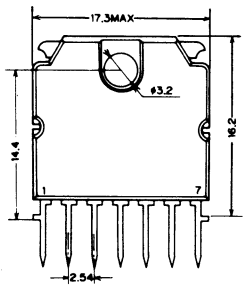


Equivalent Circuit



■TA8201AK 051-0735-10 18W BTL Power Amp

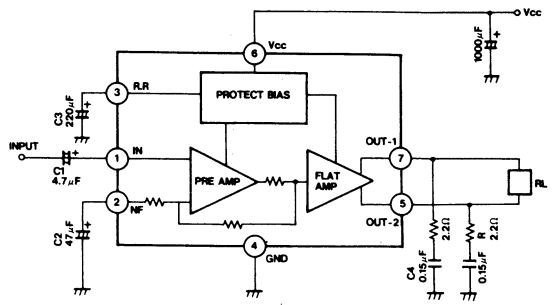
Outward Form



Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Peak Supply Voltage (0.2sec)	$V_{CC\ surge}$	50	V
DC Supply Voltage	$V_{CC\ DC}$	25	V
Operating Supply Voltage	$V_{CC\ OPR}$	18	V
Output Current (peak)	$I_{O\ peak}$	4.5	A
Power Dissipation	P_D	15	W

Block Diagram and Test Circuit

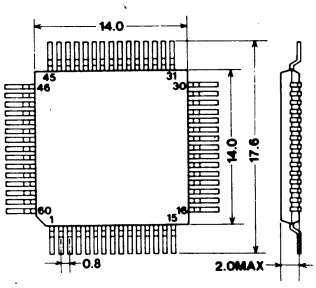


■TC9304F-006-US 051-1019-00 TC9304F-006-BS 051-1019-05 Tuning System Controller

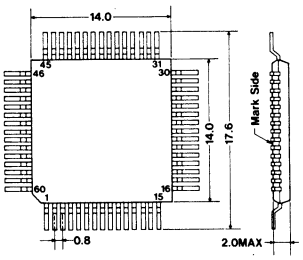
I Description

This IC, which contains a prescaler, PLL and LCD driver, in a chip, is a CMOS microprocessor for digital tuning.

II Outward Form

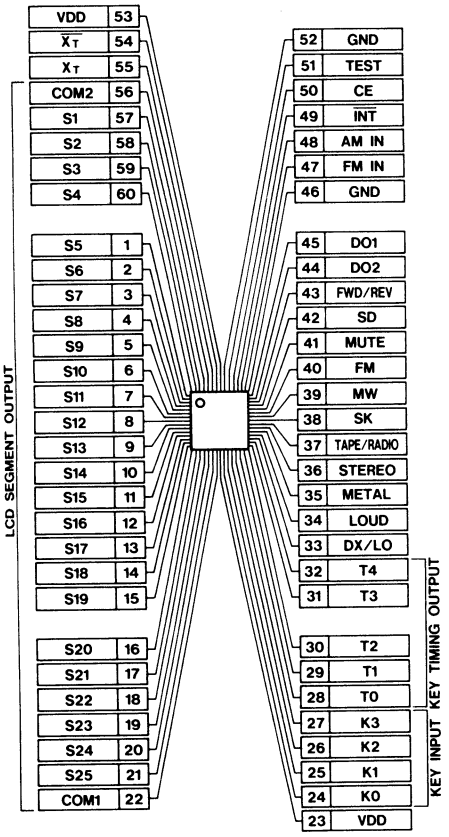


BS Type



US Type

III Terminal Connection



IV Terminal Description

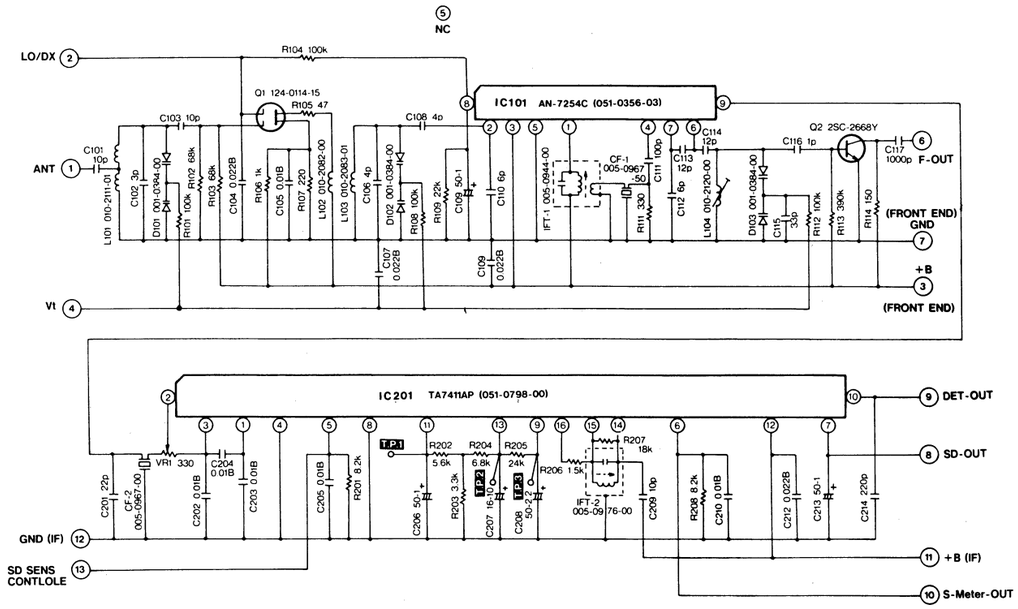
Pin No.	Symbol	Function
1 ~ 21 57 ~ 60	S5 ~ S25 S1 ~ S4	Segment signal output terminals for LCD panel.
22 56	COM1 COM2	Common signal output terminals for LCD panel.
23	VDD	Power supply terminal. (5V±10%)
24 ~ 27	K0 ~ K3	Key return signal input terminals for key matrix.
28 ~ 32	T0 ~ T4	Signal source output terminals for key matrix.
33	DX/LO	Terminal to stop sensitivity switching output. LOCAL mode : "H", DX mode : "L"
34	LOUD	LOUD ON/OFF selector output terminal. LOUD ON : "H", LOUD OFF : "L"
35	METAL	METAL ON/OFF selector output terminal. METAL ON : "H", METAL OFF : "L"
36	STEREO	ST station detect input terminal. Judges "L" as the ST station.
37	TAPE/RADIO	TAPE/RADIO sound selector output terminal. RADIO mode : "H", TAPE mode : "L"
38	SK	SK station detect input terminal. Judges "L" as the SK station.
39	MW	Band selector output terminal.
40	FM	Band / Pin 39 / Pin 40 FM / ✱ / H MW / H / L LW / L / L ✱→when SDK/CLOCK : OFF VF mode OFF : H when SDK/CLOCK : ON MONO mode : H
41	MUTE	Muting signal output terminal for muting the POP noise at tape time and shock noise at releasing time of lock at PLL part. MUTE time : "H"
42	SD	With input of "H" to this terminal, it is judged that the broadcasting station could receiver.
43	FWD/REV	Tape run direction detect input terminal. FWD mode : "H"
44 45	DO2 DO1	This is the output terminal for phase-comparator of PLL.
46	GND	Ground.
47	FM IN	Input terminal to receive FM local oscillator output.
48	AM IN	Input terminal to receive AM local oscillator output.
49	$\overline{INT}$	System reset signal input terminal for device. "L" → Reset
50	CE	Select signal input terminal of a device. Set to "H" when you make the device function normally, and set to "L" when you do not use it.
51	TEST	Test mode control input terminal.
52	GND	Ground.
53	VDD	Power supply terminal. (5V±10%)
54 55	$\overline{XT}$ XT	Connection terminals for a crystal oscillator. (7.2MHz)

V Key Matrix

Key Out \ Key In	K0 (Pin 24)	K1 (Pin 25)	K2 (Pin 26)	K3 (Pin 27)
T0 (Pin 28)	M3	M4	M5/MET	——
T1 (Pin 29)	M2	M1	AS	BAND
T2 (Pin 30)	UP	DOWN	T-MOD/ SEEK UP	VF/ST
T3 (Pin 31)	SDK	TAPE/ RADIO	DK	LOUD
T4 (Pin 32)	EO	——	MANU/ UP	W

Momentary SW Diode SW Transistor SW

■ FM BLOCK ASS'Y: (880-1415A)

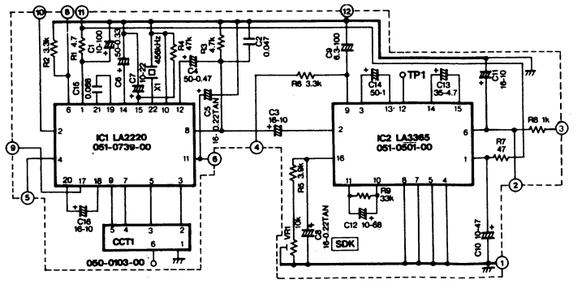


◎FM TUNER BLOCK Ass'y 880-1415A

REF.NO.	PART NO.	DESCRIPTION	Q'TY
D101,102,103	001-0384-00	Diode (1SV103)	3
IFT1	005-0944-00	IF-Trans (FM-MIX)	1
CF2	005-0967-00	IF-Trans (FM-MIX)	2
IFT2	005-0976-00	IF-Trans (AM)	1
L102	010-2082-00	Coil (RF)	1
L103	010-2083-01	Coil (RF)	1
L101	010-2111-01	Coil (ANT)	1
L104	010-2123-00	Coil (OSC)	1
VR1	012-3808-00	Variabe resistor (330Ω)	1
IC101	051-0356-03	IC (AN7254C)	1
IC201	051-0798-00	IC (TA7411AP)	1
Q2	102-2668-25	Transistor (2SC2668Y)	1
Q1	124-0114-15	Transistor (3SK-1140)	1
R101	116-1041-10	Chip resistor(1/8W100kΩ)	1
R109	116-2231-10	Chip resistor(1/8W22kΩ)	1
R205	116-2431-10	Chip resistor(1/8W24kΩ)	1
R202	116-5621-10	Chip resistor(1/8W5.6kΩ)	1
R204	116-6821-10	Chip resistor(1/8W6.8kΩ)	1
R103	116-6831-10	Chip resistor(1/8W68kΩ)	1
R108	117-1041-10	Chip resistor(1/16W100kΩ)	1
R114	117-1511-10	Chip resistor(1/16W150Ω)	1
R206	117-1521-10	Chip resistor(1/16W1.5kΩ)	1
R207	117-1831-10	Chip resistor(1/16W18kΩ)	1
R107	117-2211-10	Chip resistor(1/16W220Ω)	1
R111	117-3311-10	Chip resistor(1/16W330Ω)	1
R203	117-3321-10	Chip resistor(1/8W3.3kΩ)	1

REF.NO.	PART NO.	DESCRIPTION	Q'TY
R113	117-3941-00	Chip resistor (1/16W390kΩ)	1
R105	117-4701-10	Chip resistor (1/16W47Ω)	1
R102	117-6831-10	Chip resistor (1/16W68kΩ)	1
R201	117-8221-10	Chip resistor (1/16W3.2kΩ)	1
C117	160-1022-05	Ceramic capacitor (1000pF)	1
C204	171-1033-06	Ceramic capacitor (0.01μF)	1
C107,109,212	171-2233-06	Ceramic capacitor (0.022μF)	3
C111	174-1010-13	Ceramic capacitor (100pF)	1
C113	174-1200-13	Ceramic capacitor (12pF)	1
C101	175-1007-00	Ceramic Chip cap capacitor (10pF)	1
C108	175-4096-00	Ceramic Chip cap capacitor (4pF)	1
C101,103	176-1007-00	Ceramic Chip cap capacitor (10pF)	2
C116	176-1096-00	Ceramic Chip cap capacitor (1pF)	1
C114	176-1201-00	Ceramic Chip cap capacitor (12pF)	1
C201	176-2201-00	Ceramic Chip cap capacitor (22pF)	1
C214	176-2211-00	Ceramic Chip cap capacitor (220pF)	1
C102	176-3096-00	Ceramic Chip cap capacitor (3pF)	1
C115	176-3301-00	Ceramic Chip cap capacitor (33pF)	1
C106	176-4096-00	Ceramic Chip cap capacitor (4pF)	1
C110,112	176-6097-00	Ceramic Chip cap capacitor (6pF)	2
C105,202 203,205	178-1032-05	Ceramic Chip cap capacitor (0.01μF)	4
C104	178-2232-05	Ceramic Chip cap capacitor (0.022μF)	1
C206,213	182-1053-62	Electrolytic capacitor (50V1μF)	2
C207	182-1063-32	Electrolytic capacitor (16V10μF)	1
C208	182-2253-62	Electrolytic capacitor (50V2.2μF)	1
C109	183-1053-62	Electrolytic capacitor (50V1μF)	-

■ SDK BLOCK ASS'Y: (880-0201B)



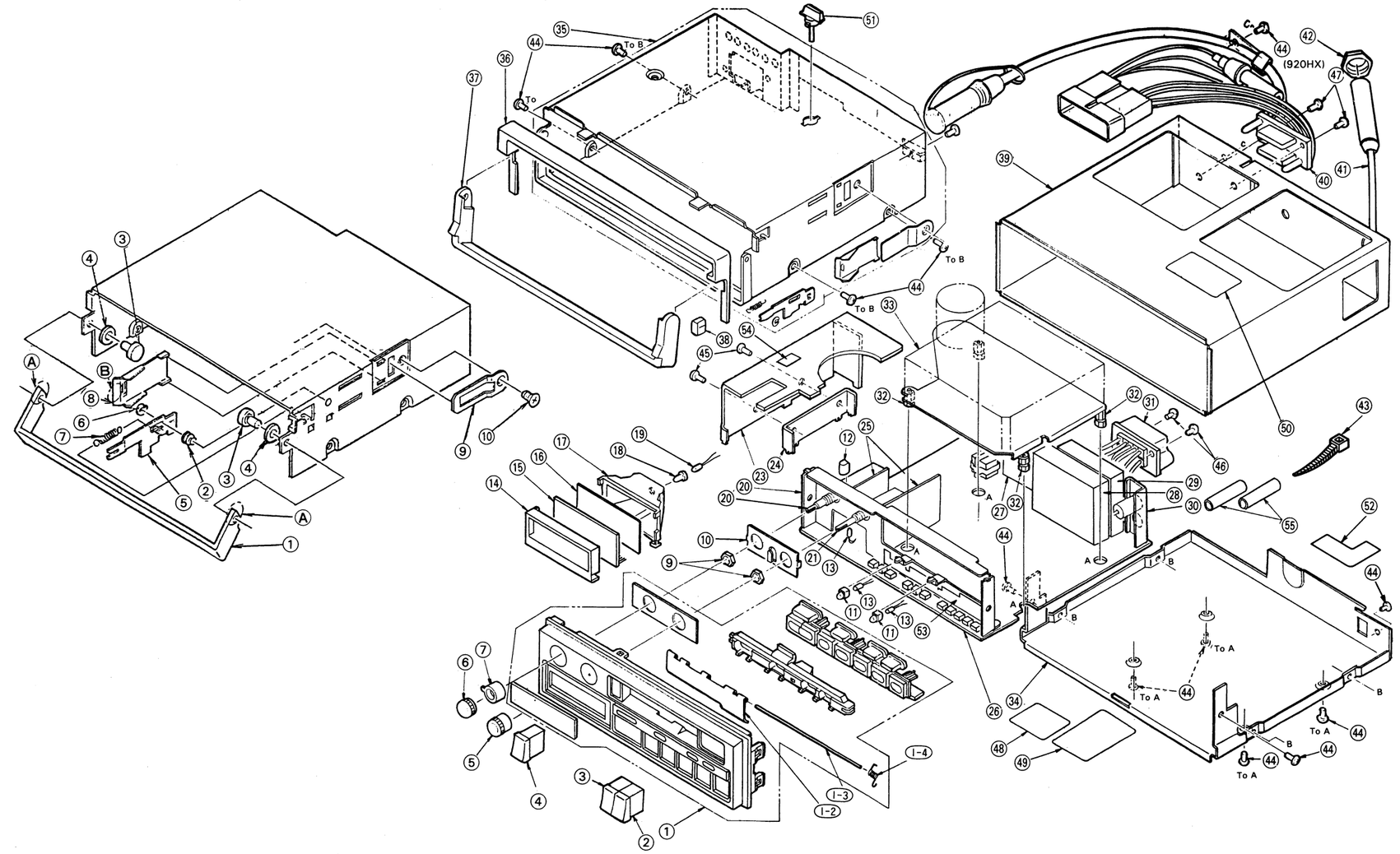
◎SDK P.W.B 880-0201B

REF.NO.	PART NO.	DESCRIPTION	Q'TY
VR_1	012-3707-05	Variable resistor (VR-10kΩ)	1
CCT_1	050-0103-00	Component circuit (TCB06T0006)	1
IC_2	051-0501-00	IC (LA3365)	1
IC_1	051-0739-00	IC (LA2220)	1
X_1	060-0115-01	Ceramic resonator (CBS456F11)	1
C_2	171-4733-06	Ceramic capacitor (0.047μF)	1
C_{15}	172-6831-20	Polyester capacitor (0.068μF)	1
$C_{5.8}$	042-0249-00	Electrolytic capacitor (16V0.22μF TAN)	2
C_{14}	182-1053-62	Electrolytic capacitor (50V1μF)	1

REF.NO.	PART NO.	DESCRIPTION	Q'T
$C_{3.11.16}$	182-1063-32	Electrolytic capacitor (16V10μF)	3
C_9	182-1073-12	Electrolytic capacitor (6.3V100μF)	1
C_1	182-1073-22	Electrolytic capacitor (10V100μF)	1
C_7	182-2263-22	Electrolytic capacitor (10V22μF)	1
C_6	182-3343-62	Electrolytic capacitor (50V0.33μF)	1
C_{12}	183-6863-22	Electrolytic capacitor (10V68μF)	1
C_4	182-4743-62	Electrolytic capacitor (50V0.47μF)	1
C_{13}	182-4753-52	Electrolytic capacitor (35V4.7μF)	1
C_{10}	182-4763-22	Electrolytic capacitor (10V47μF)	1

■ EXPLODED VIEW • PARTS LIST:

◎ Main Section



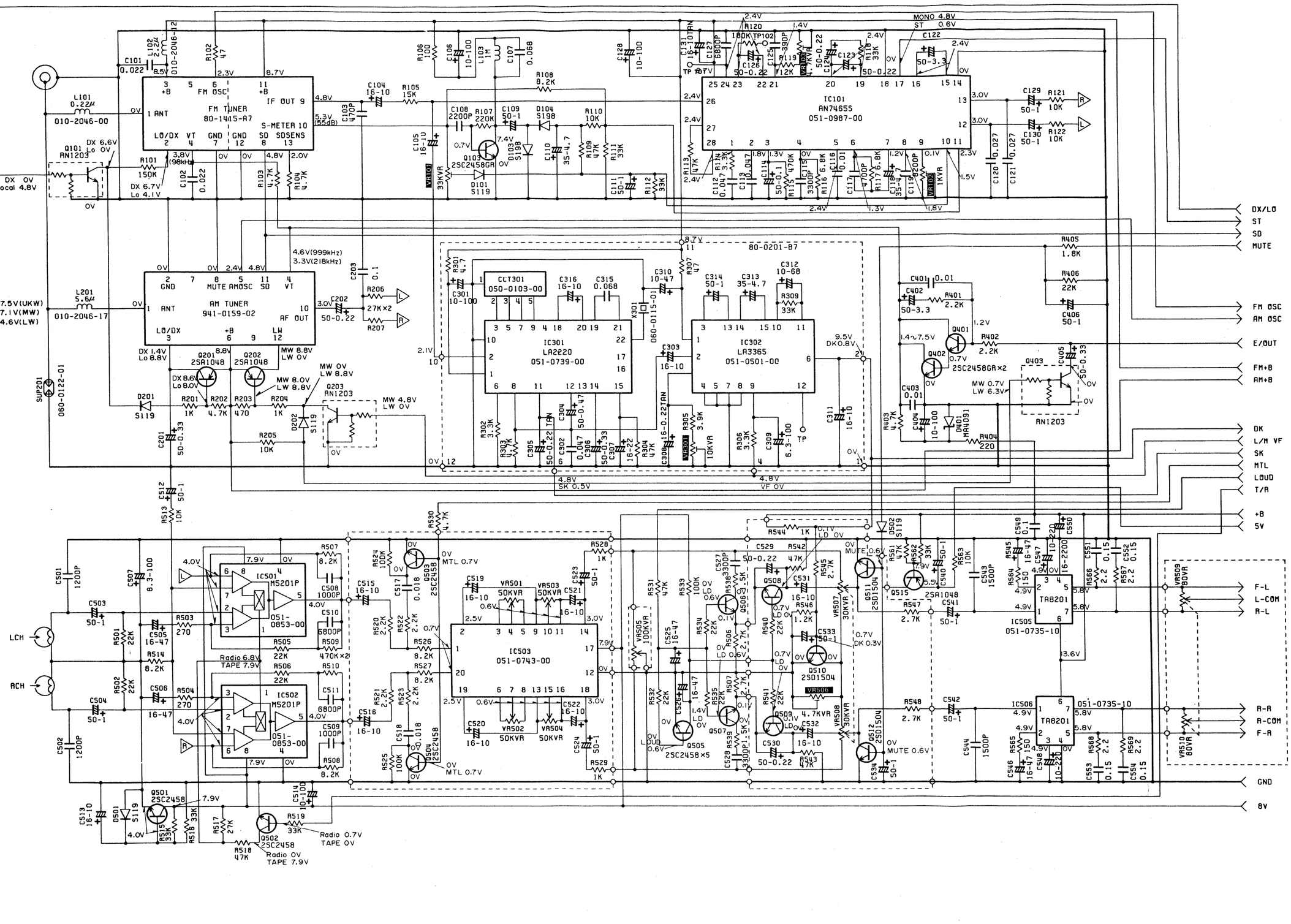
◎ Upper Case

Ref No.	Part No.	Description	Q'ty
1	330-8581-01	Handle	1
2	341-1360-00	Machined part	1
3	399-3975-00	Dieneeded part	2
4	746-0776-00	Special washer	2
5	330-8947-00	Lever	1
6	743-2500-10	E-RING	1
7	750-2624-00	Spring	1
8	330-8578-01	Hook plate	1
9	750-2625-01	Spring	1
10	714-3006-40	Machine screw	1

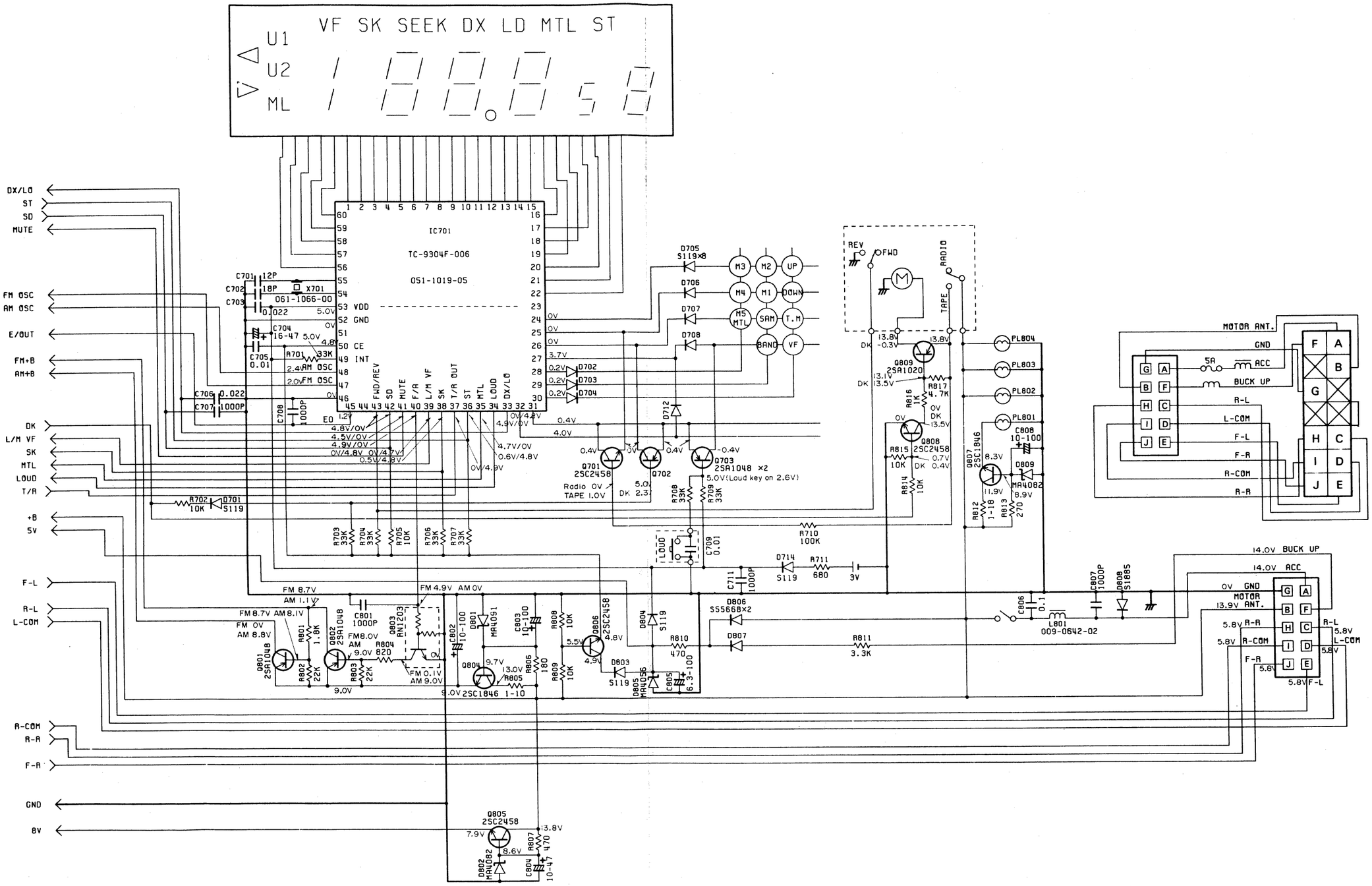
Ref No.	Part No.	Description	Q'ty
1	940-0992A 940-0993A	Escutcheon ass'y (919HP) (920HX)	1
1-2	320-0375-98 320-0375-99	Dust proof cover (919HP) (920HX)	1
1-3	341-1278-00	Shaft	1
1-4	750-2530-03	Spring	1
2	382-1253-00	Button (FF)	1
3	382-1254-00	Button (REW)	1
4	382-1255-00	Button (PRO)	1
5	380-5009-00	Knob (BASS/TRE)	1

Ref. No.	Part No.	Description	Q'ty
6	380-5008-00	Knob (MAIN)	1
7	380-5007-00	Knob (FADER)	1
9	722-0370-00	Special nut	2
10	330-8986-00	VR holder	1
11	345-3087-12 345-3087-01	P.L cap (919HP) (920HX)	1
12	345-3922-05 345-3922-01	P.L cap (919HP) (920HX)	1
13	017-0377-05	Pilot lamp	3
14	330-8946-00	LCD cvr	1
15	379-0223-00	LCD	1
16	347-2733-00	Reflector	1
17	335-2884-00	LCD holder	1
18	345-3667-15 345-4157-02	P.L cap (919HP) (920HP)	1
19	017-0363-03	Pilot lamp	1
20	012-4783-00 012-4779-00	Volume (MAIN) (919HP) (920HX)	1
21	012-4778-00	Volume (BIT)	1
22	330-8944-00	Front plate	1
23	313-1346-00	Heat sink	1
24	330-8945-00	IC holder	1
25	099-8442-00 099-8443-00	VOL-PWB (919HP) (920HX)	1
26	099-8441-00	Main-PWB	1
27	880-0201B	SDK block (919HP)	1
28	941-0159-02	AM tuner pack	1
29	880-1415A	FM tuner pack	1
30	092-0630-00	Antenna receptacle	1
31	854-0707-00 854-0708-00	Extension lead (919HP) (920HX)	1
32	716-0853-00	Special screw (MECHA)	4
33	930-0572-14	Tape mechanism (SAM II C4)	1
34	311-1317-06	Lower case	1
35	310-1360-00	Upper case	1
36	370-5057-00	Escutcheon	1
37	335-2459-00	Handle cover	1
38	382-1653-00	Button	1
39	300-7447-01	Mounting bracket (TAB)	1
40	854-0732-01 854-0863-01	Extension (919HP) lead (920HX) with DIN 8P	1
41	093-1042-01	ANT Jumper	1
42	722-0518-00	Nut	1
43	335-0833-03	Read holder	1
44	716-0854-00	Tap tight (M3×6) (919HP) (920HX)	11 12
45	714-2610-81	Machine screw	2
46	714-3010-81	Machine screw	2
47	731-3010-89	Tap tight	2
48	286-7087-00 286-7088-00	Set plate (919HP) (920HX)	1
49	285-0915-00	Guide label	1
50	285-1199-00	Guide label	1
51	335-1360-00	Lock pin	1
52	347-2342-00	Label	1
53	347-2783-00	Reflector	1
54	347-2800-00	Label	1
55	825-1128-00	Heat proof tube	2

■ CIRCUIT DIAGRAM: (919HP, PE-9285A-A 1/2)

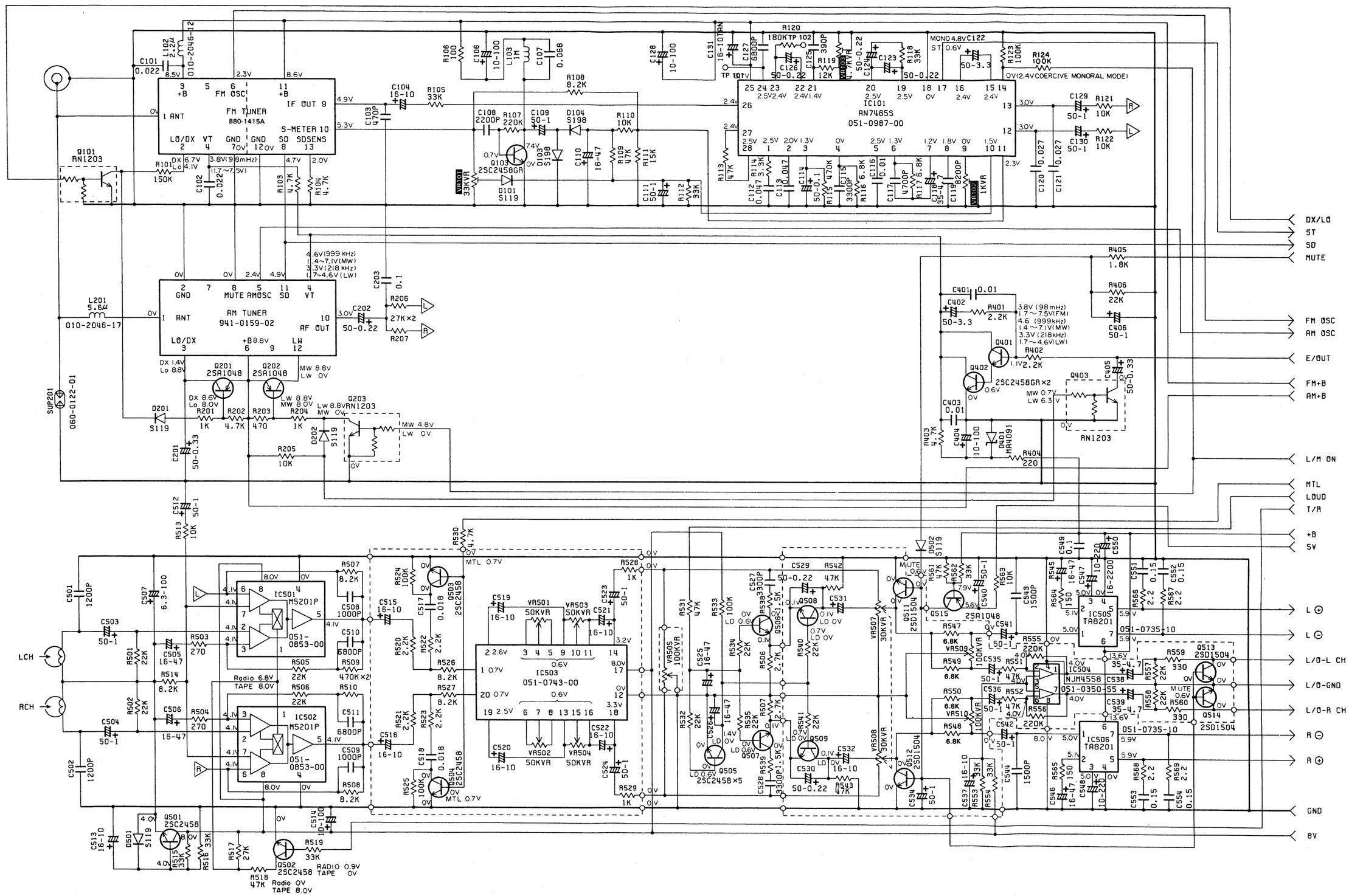


■ CIRCUIT DIAGRAM: (919HP, PE-9285A-A 2/2)

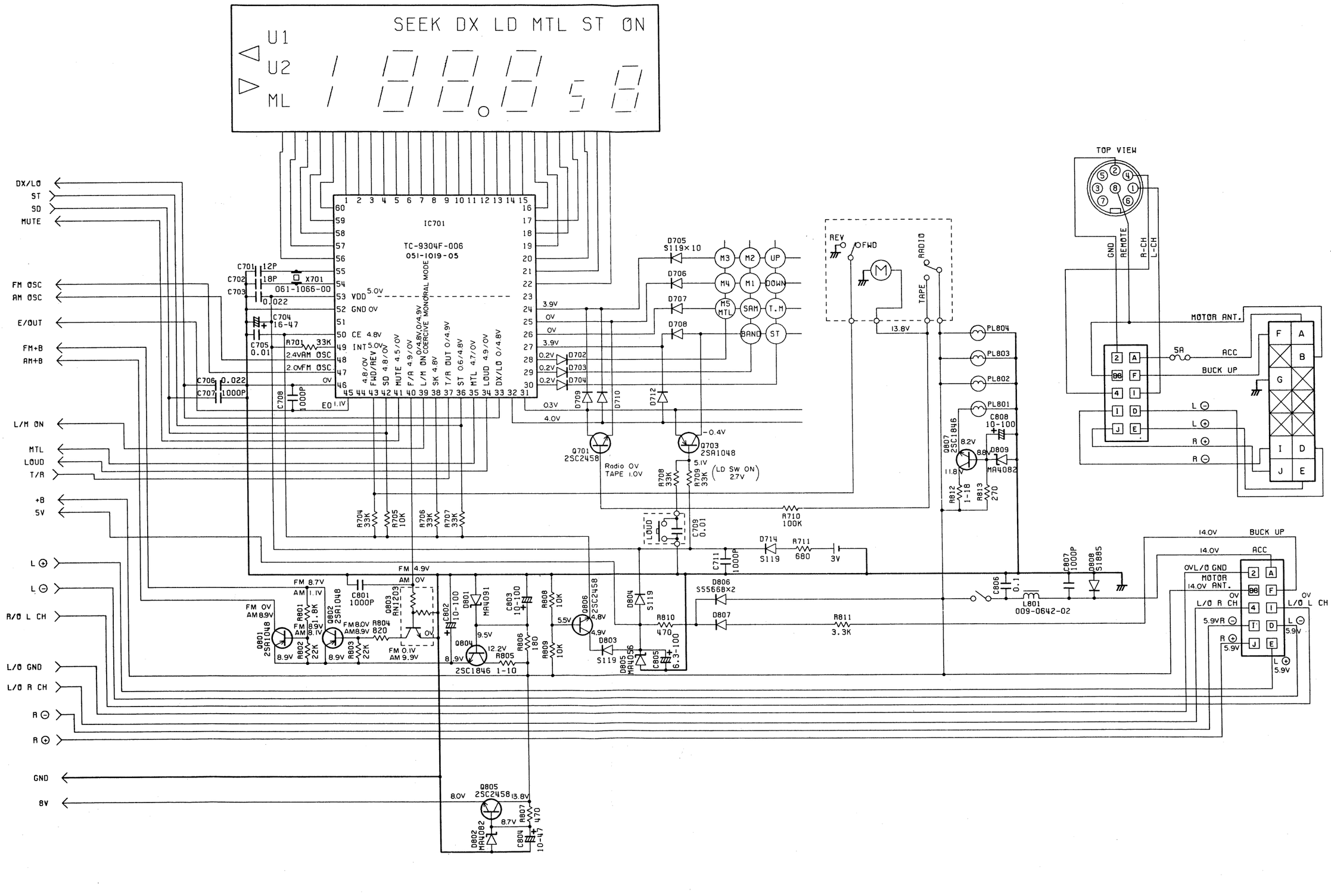


■ CIRCUIT DIAGRAM: (920HX, PE-9286A-A 1/2)

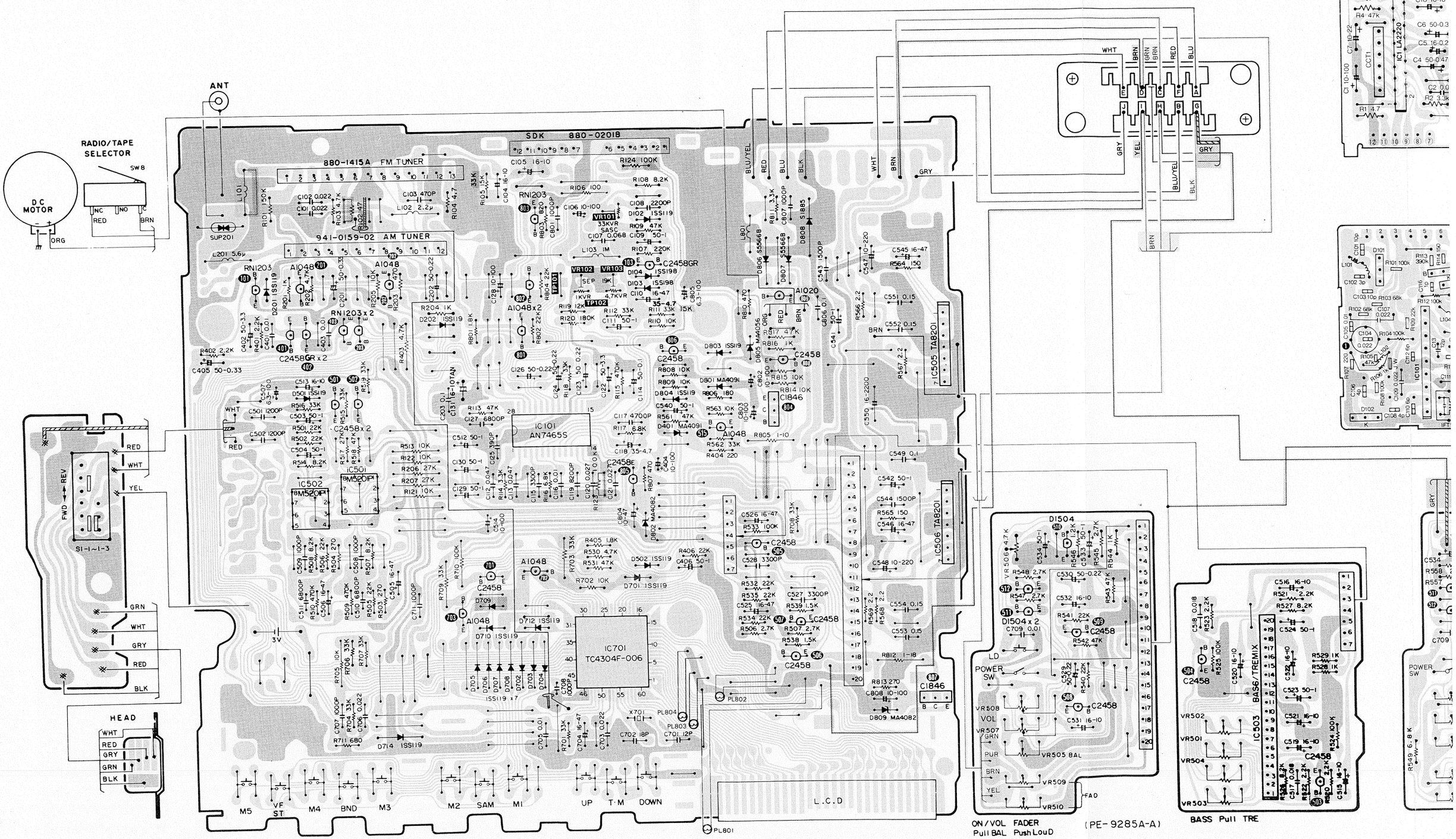
7698



■ CIRCUIT DIAGRAM: (920HX, PE-9286A-A 2/2)

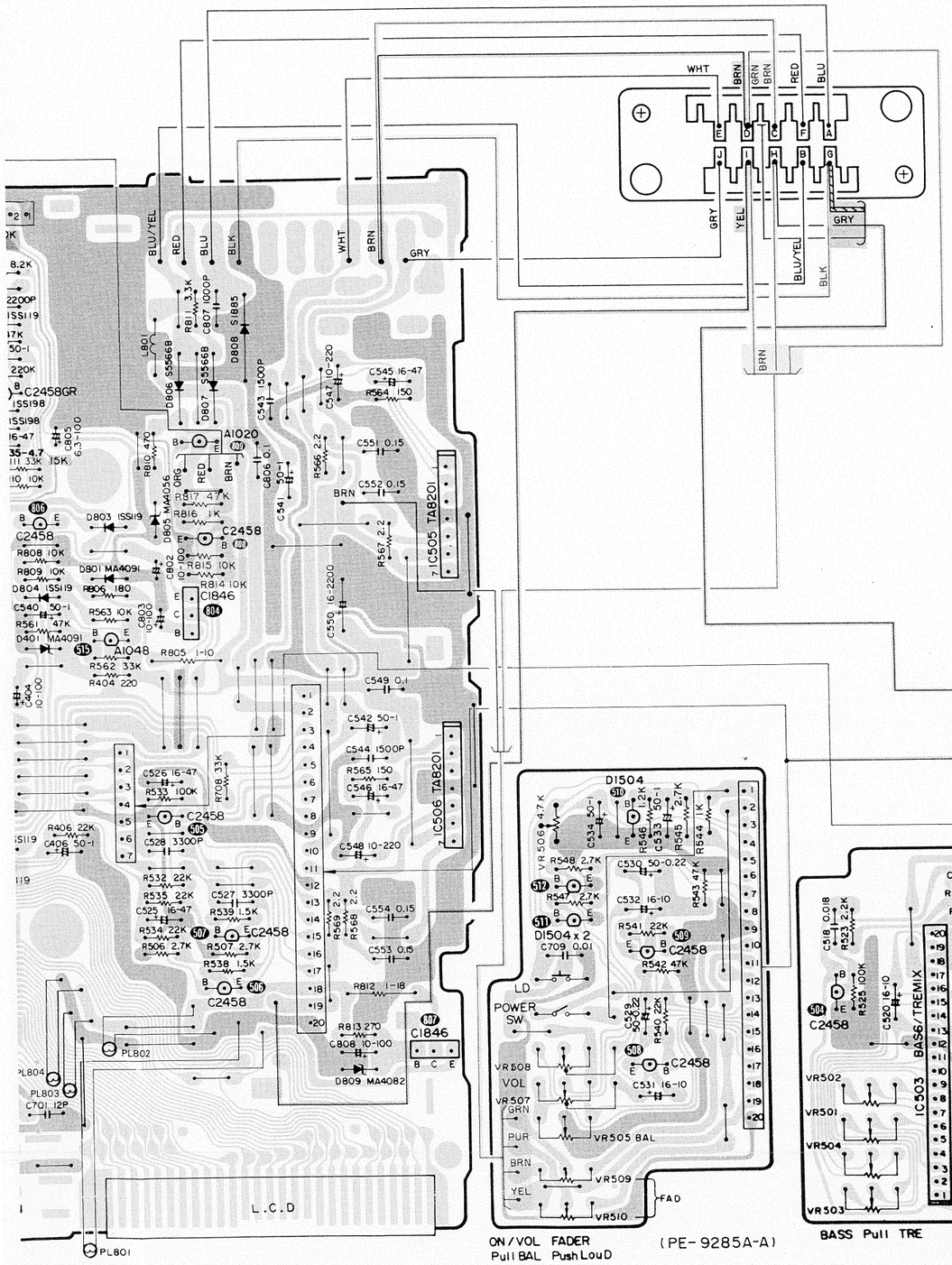


■ PRINTED WIRING BOARD:

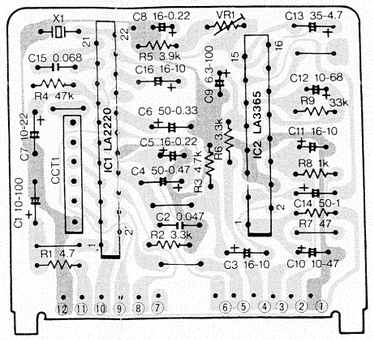


This circuit is added for 919HP (PE-9285A-A)

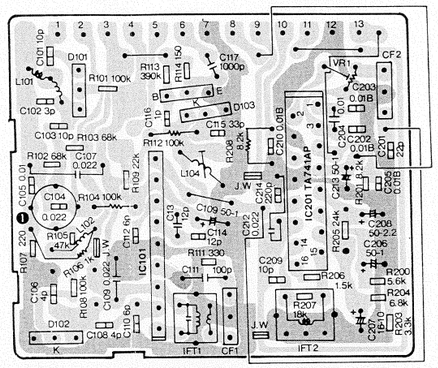
This circuit is added for 920HX (PE-9286A-A)



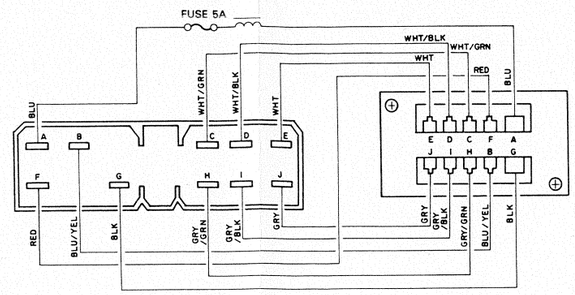
SDK BLOCK Ass'y 880-0201B



FM BLOCK ASS'Y

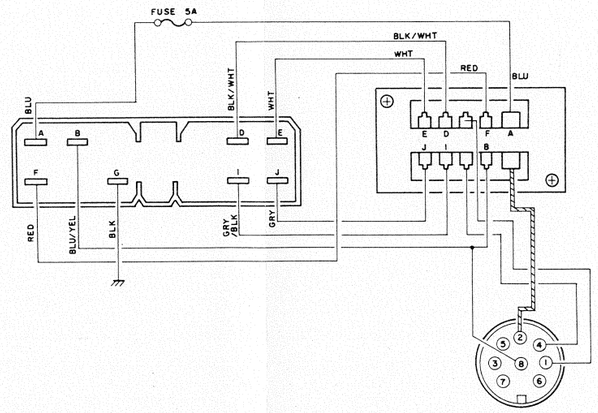


EXTENSION LEAD 854-0732-01 (PE-9285A-A)



NO	DESCRIPTION
A	ACC
B	AUTO ANT
C	REAR Lch SP (−)
D	Lch SP COM
E	FRONT Lch SP (+)
F	BACK UP
G	GROUND
H	REAR Rch SP (−)
I	Rch SP COM
J	FRONT Rch SP (+)

EXTENSION LEAD 854-0863-01 (PE-9286A-A)



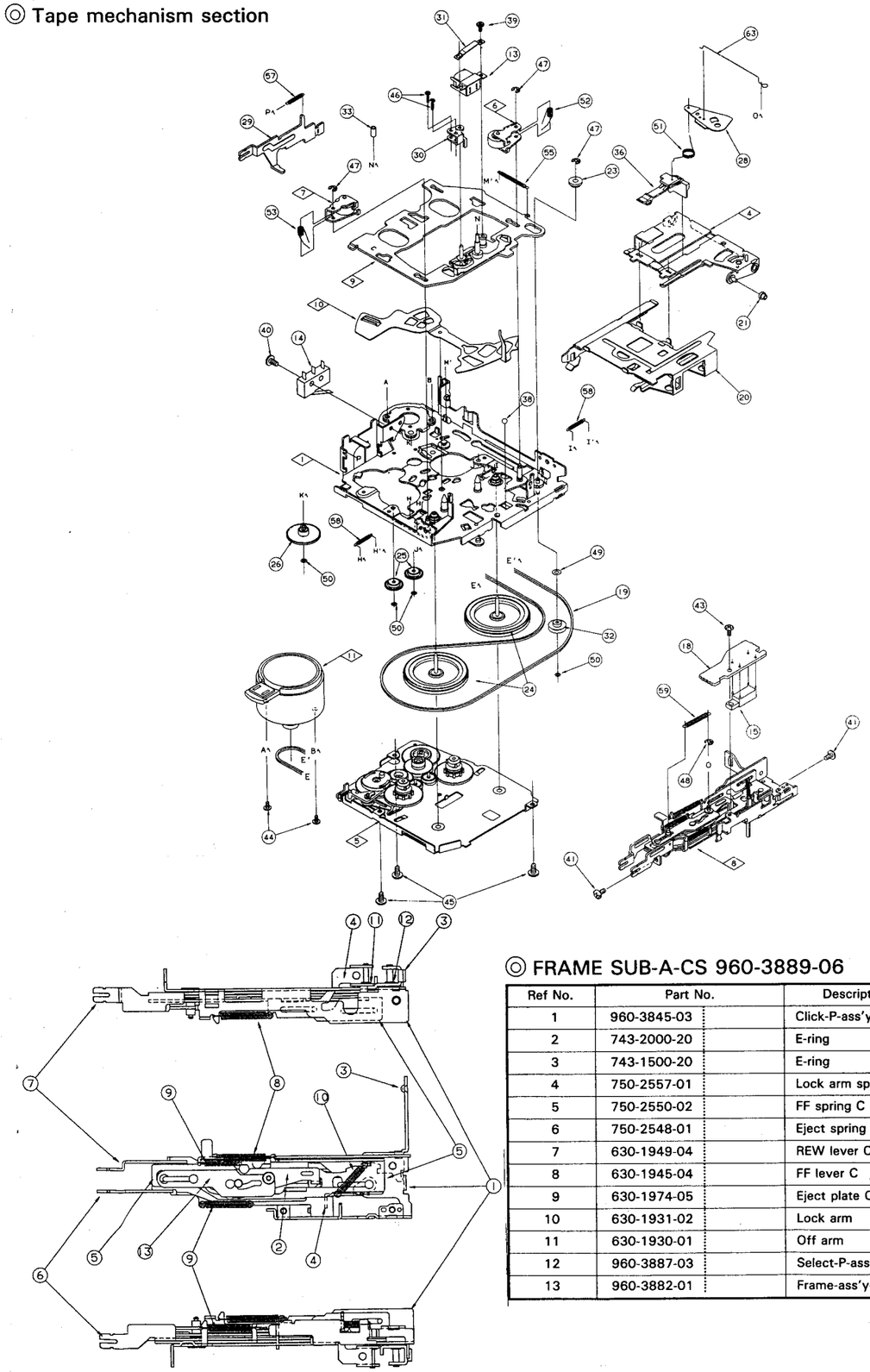
NO	DESCRIPTION
A	ACC
B	AUTO ANT
D	Lch SP (−)
E	Lch SP (+)
F	BACK UP
G	GROUND
I	Rch SP (−)
J	Rch SP (+)

NO	DESCRIPTION
1	Lch
2	SIG GND
4	Rch
8	REMO

This circuit is added for 919HP (PE-9285A-A)
This circuit is added for 920HX (PE-9286A-A)

■ EXPLODED VIEW • PARTS LIST: 930-0572-14

◎ Tape mechanism section

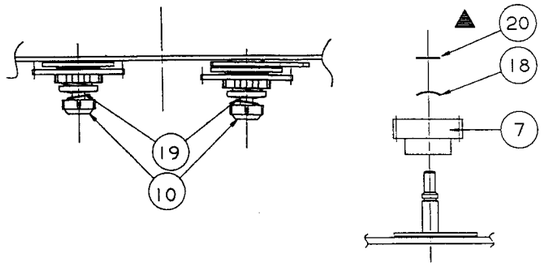


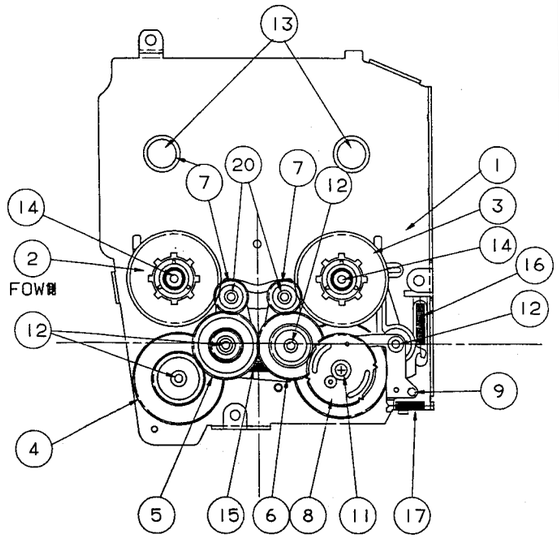
◎ FRAME SUB-A-CS 960-3889-06

Ref No.	Part No.	Description	Q'ty
1	960-3845-03	Click-P-ass'y	1
2	743-2000-20	E-ring	1
3	743-1500-20	E-ring	1
4	750-2557-01	Lock arm spring	1
5	750-2550-02	FF spring C	2
6	750-2548-01	Eject spring	1
7	630-1949-04	REW lever C	1
8	630-1945-04	FF lever C	1
9	630-1974-05	Eject plate CS	1
10	630-1931-02	Lock arm	1
11	630-1930-01	Off arm	1
12	960-3887-03	Select-P-ass'y-S	1
13	960-3882-01	Frame-ass'y-CS	1

Ref No.	Part No.	Description	Q'ty
1	960-3833-02	Deck P-ass'y C	1
4	960-3840-02	Guide arm-ass'y	1
5	960-3850-11	Bottom sub-A-C	1
6	960-3852-02	Roller-ass'y-F	1
7	960-3853-02	Roller-ass'y-R	1
8	960-3889-06	Frame sub-A-CS	1
9	960-3890-06	Head-P-ass'y CD	1
10	960-3881-03	CH plate-ass'y	1
11	SMA-112-104	Motor-ass'y	1
13	011-0307-00	Head	1
14	013-2690-02	Switch	1
15	013-3807-00	Switch	1
18	099-7852-00	PWB	1
19	602-0103-10	Belt	1
20	606-0083-06	Pack guide	1
21	610-0226-00	Roller	1
23	610-0294-01	Head-P-G-roller	1
24	611-0078-02	Flywheel	2
25	613-0095-01	FF idler gear	2
26	613-0087-10	Gear A	1
28	630-1932-02	Swing arm	1
29	630-1934-02	Program lever	1
30	630-1956-02	Adjust link	1
31	632-1962-02	Head spring	1

Ref No.	Part No.	Description	Q'ty
32	604-0035-00	Tension pulley	1
33	631-0545-01	Eject roller	1
36	631-0552-03	Pack stopper	1
38	632-1888-00	Ball	1
39	716-0816-00	Screw	1
40	714-2308-81	Machine screw	1
41	714-2604-81	Machine screw	2
43	716-0485-00	Machine screw	1
44	716-0715-15	Special screw	2
45	716-0717-10	Special screw	3
46	716-0718-21	Special screw	2
47	743-1500-20	E-ring	3
48	743-2000-20	E-ring	1
49	746-0924-00	Special washer	1
50	746-0761-00	Special washer	4
51	750-2361-01	Spring	1
52	750-2535-04	Roller spring F	1
53	750-2536-04	Roller spring R	1
55	750-2560-02	Head-P-spring	1
57	750-2541-02	Program spring	1
58	750-2545-00	FF gear spring	2
59	750-2620-00	Click spring	1
63	750-2569-03	Eject rod RS	1





◎ BOTTOM SUB-A-C 960-3850-11

Ref No.	Part No.	Description	Q'ty
1	960-3846-06	Bottom ass'y C	1
2	960-3854-03	Reel ass'y F	1
3	960-3855-05	Reel ass'y R	1
4	613-0088-01	Gear B	1
5	613-0089-01	Gear F	1
6	613-0090-02	Gear R	1
7	613-0091-01	Play idler gear	2
8	613-0093-02	CH gear	1
9	631-0546-01	Lock link	1
10	631-0554-00	Slide bush	2
11	716-0716-10	Special screw	1
12	746-0761-00	Special washer	4
13	746-0767-00	Special washer	2
14	746-0768-00	Special washer	2
15	750-2542-00	Idler-P-spring	1
16	750-2543-01	Sensing spring	1
17	750-2544-03	Lock-L-spring	1
18	745-0678-02	Special washer	2
19	750-2564-01	Slide spring	2
20	746-0797-00	Special washer	2

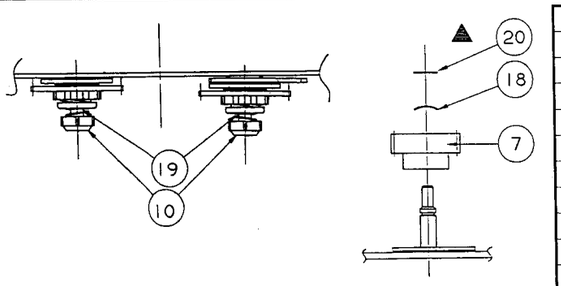
■ PART

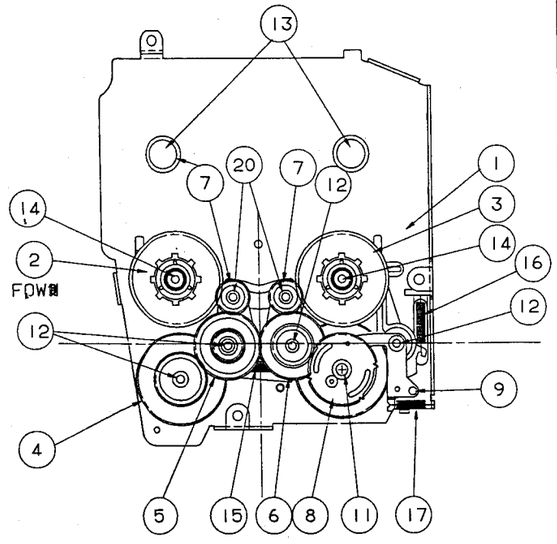
◎ Electric

◎ MAIN

Ref No.
D808
D102,201,202 402,502, 702 – 710,7 714,803,804
D806,807
D103,104
D401,801
D802,809
D805
L801
L101
L102
L201
L103
VR102
VR103
VR101
PL801
PL802,803,80
SUP201
X701
IC505,506
IC501,502
IC101
IC701
Q809
Q201,202,51 702,703,80 802
Q501,502,50 506,507,70 805,806,80
Q804,807
Q103
Q401,402
Q101,203,40 803
R805
R812
C131
C125
C103
C508,509,70 708,711,80
C115,401,40 705
C501,502
C543,544
C108
C101,102,70 706
C120,121
C115,527,52
C117
C112,113
C127
C107

Ref No.	Part No.	Description	Q'ty
1	960-3833-02	Deck P-ass'y C	1
4	960-3840-02	Guide arm-ass'y	1
5	960-3850-11	Bottom sub-A-C	1
6	960-3852-02	Roller-ass'y-F	1
7	960-3853-02	Roller-ass'y-R	1
8	960-3889-06	Frame sub-A-CS	1
9	960-3890-06	Head-P-ass'y CD	1
10	960-3881-03	CH plate-ass'y	1
11	SMA-112-104	Motor-ass'y	1
13	011-0307-00	Head	1
14	013-2690-02	Switch	1
15	013-3807-00	Switch	1
18	099-7852-00	PWB	1
19	602-0103-10	Belt	1
20	606-0083-06	Pack guide	1
21	610-0226-00	Roller	1
23	610-0294-01	Head-P-G-roller	1
24	611-0078-02	Flywheel	2
25	613-0095-01	FF idler gear	2
26	613-0087-10	Gear A	1
28	630-1932-02	Swing arm	1
29	630-1934-02	Program lever	1
30	630-1956-02	Adjust link	1
31	632-1962-02	Head spring	1





Ref No.	Part No.	Description	Q'ty
32	604-0035-00	Tension pulley	1
33	631-0545-01	Eject roller	1
36	631-0552-03	Pack stopper	1
38	632-1888-00	Ball	1
39	716-0816-00	Screw	1
40	714-2308-81	Machine screw	1
41	714-2604-81	Machine screw	2
43	716-0485-00	Machine screw	1
44	716-0715-15	Special screw	2
45	716-0717-10	Special screw	3
46	716-0718-21	Special screw	2
47	743-1500-20	E-ring	3
48	743-2000-20	E-ring	1
49	746-0824-00	Special washer	1
50	746-0761-00	Special washer	4
51	750-2361-01	Spring	1
52	750-2535-04	Roller spring F	1
53	750-2536-04	Roller spring R	1
55	750-2560-02	Head-P-spring	1
57	750-2541-02	Program spring	1
58	750-2545-00	FF gear spring	2
59	750-2620-00	Click spring	1
63	750-2569-03	Eject rod RS	1

◎ BOTTOM SUB-A-C 960-3850-11

Ref No.	Part No.	Description	Q'ty
1	960-3846-06	Bottom ass'y C	1
2	960-3854-03	Reel ass'y F	1
3	960-3855-05	Reel ass'y R	1
4	613-0088-01	Gear B	1
5	613-0089-01	Gear F	1
6	613-0090-02	Gear R	1
7	613-0091-01	Play idler gear	2
8	613-0093-02	CH gear	1
9	631-0546-01	Lock link	1
10	631-0554-00	Slide bush	2
11	716-0716-10	Special screw	1
12	746-0761-00	Special washer	4
13	746-0767-00	Special washer	2
14	746-0768-00	Special washer	2
15	750-2542-00	Idler-P-spring	1
16	750-2543-01	Sensing spring	1
17	750-2544-03	Lock-L-spring	1
18	745-0678-02	Special washer	2
19	750-2564-01	Slide spring	2
20	746-0797-00	Special washer	2

■ PARTS LIST:

◎ Electrical section

◎ MAIN P.W.B.

Ref No.	Part No.	Description	Q'ty
D808	001-0188-01	Diode (1SS1885A)	1
D102,201,202, 402,502, 702~710,712, 714,803,804	001-0330-00	Diode (1SS119)	18
D806,807	001-0360-00	Diode (S5566B)	2
D103,104	001-0361-00	Diode (1SS198)	2
D401,801	001-0423-24	Diode (MA4091)	2
D802,809	001-0423-23	Diode (MA4082)	2
D805	001-0423-19	Diode (MA4056)	1
L801	009-0642-02	Choke	1
L101	010-2046-00	Coil (0.22μH)	1
L102	010-2046-12	Coil (2.2μH)	1
L201	010-2046-17	Coil (5.6μH)	1
L103	010-2046-44	Coil (1M)	1
VR102	012-3808-02	Variable resistor (1k)	1
VR103	012-3808-05	Variable resistor (4.7k)	1
VR101	012-3808-08	Variable resistor (33k)	1
PL801	017-0346-03	Pilot lamp	1
PL802,803,804	017-0377-05	Pilot lamp	3
SUP201	060-0122-01	Surge protector	1
X701	061-1066-00	Crystal	1
IC505,506	051-0735-10	IC (TA8201)	2
IC501,502	051-0853-00	IC (M5201P)	2
IC101	051-0987-00	IC (AN7465S)	1
IC701	051-1019-00 051-1019-05	IC (TC9304I-006-US) IC (TC9304F-006-BS)	1 1
Q809	100-1020-00	Transistor (2SA1020)	1
Q201,202,515, 702,703,801, 802	100-1048-00	Transistor (2SA1048)	7
Q501,502,505, 506,507,701, 805,806,808	102-2458-00	Transistor (2SC2458)	9
Q804,807	102-1846-00	Transistor (2SC1846)	2
Q103	102-2458-49	Transistor (2SC2458GR)	1
Q401,402	102-2458-51	Transistor (2SC2458GR, BL)	2
Q101,203,403, 803	125-2003-93	Transistor (RN1203)	4
R805	114-1001-11	Oxidizad metal resistor (1W 10Ω)	1
R812	114-1801-11	Oxidizad metal resistor (1W 18Ω)	1
C131	042-0176-00	Electrolytic capacitor (16V 10μF)	1
C125	043-0212-00	Ceramic capacitor (390pF)	1
C103	160-4712-05	Ceramic capacitor (470pF)	1
C508,509,707, 708,711,801	171-1023-06	Ceramic capacitor (1000pF)	6
C115,401,403, 705	171-1033-06	Ceramic capacitor (0.01μF)	4
C501,502	171-1222-06	Ceramic capacitor (1200pF)	2
C543,544	171-1523-06	Ceramic capacitor (1500pF)	2
C108	171-2223-06	Ceramic capacitor (2200pF)	1
C101,102,703, 706	171-2233-06	Ceramic capacitor (0.022μF)	4
C120,121	171-2732-06	Ceramic capacitor (0.027μF)	2
C115,527,528	171-3323-06	Ceramic capacitor (3300pF)	3
C117	171-4723-06	Ceramic capacitor (4700pF)	1
C112,113	171-4733-06	Ceramic capacitor (0.047μF)	2
C127	171-6823-06	Ceramic capacitor (6800pF)	1
C107	171-6833-06	Ceramic capacitor (0.068μF)	1
C119	171-8222-06	Ceramic capacitor (8200pF)	1
C807	173-1022-10	Mica capacitor (1000pF)	1
C549,806,203	173-1042-10	Mica capacitor (0.1μF)	3
C551,552,553, 554	173-1542-10	Mica capacitor (0.15μF)	4
C510,511	173-6822-10	Mica capacitor (6800pF)	2
C701	174-1207-13	Ceramic capacitor (12pF)	1
C702	174-1807-13	Ceramic capacitor (18pF)	1
C106,404,514	179-1073-21	Electrolytic capacitor (10V 100μF)	3
C808	179-1073-22	Electrolytic capacitor (10V 100μF)	1
C547,548	179-2273-22	Electrolytic capacitor (10V 220pF)	2
C550	179-2283-31	Electrolytic capacitor (16V 2200μF)	1
C804	179-4763-22	Electrolytic capacitor (10V 47μF)	1
C109,541,542	182-1053-62	Electrolytic capacitor (50V 1μF)	3
C104	182-1063-32	Electrolytic capacitor (16V 10μF)	1
C128,802,803	182-1073-22	Electrolytic capacitor (10V 100μF)	3
C546	182-4763-32	Electrolytic capacitor (16V 47μF)	1
C114	183-1043-62	Electrolytic capacitor (50V 0.1μF)	1
C111,129,130, 406,503,504, 512,540	183-1053-62	Electrolytic capacitor (50V 1μF)	8
C513	183-1063-32	Electrolytic capacitor (16V 10μF)	1
C507,805	183-1073-12	Electrolytic capacitor (6.3V 100μF)	2
C123,124,126, 202	183-2243-62	Electrolytic capacitor (50V 0.22μF)	4
C201,405	183-3343-62	Electrolytic capacitor (50V 0.33μF)	2
C122,402	183-3353-62	Electrolytic capacitor (50V 3.3μF)	2
C118	183-4753-52	Electrolytic capacitor (3.5V 4.7μF)	1
C110,505,506, 525,526,545, 704	183-4763-32	Electrolytic capacitor (16V 47μF)	7

◎VOL PWB (PE-9285A-A)

Ref No.	Part No.	Description	Q'ty
IC503	051-0743-70	IC (BASS/TRE-MIX)	1
Q503,504,508, 509	102-2458-00	Transistor (2SC2458)	4
Q510,511,512	103-1504-00	Transistor (2SD1504)	3
C517,518	171-1832-06	Ceramic capacitor (0.018pF)	2
C709	171-1033-06	Ceramic capacitor (0.01μF)	1
C523,524,531 534	182-1053-62	Electrolytic capacitor (50V 1μF)	4
C515,516,519, 520,521,522, 532,533	182-1063-32	Electrolytic capacitor (16V 10μF)	8
C529,530	182-2243-62	Electrolytic capacitor (50V 0.22μF)	2
VR506	012-4318-05	Variable resistor	1

◎ VOL PWB (PE-9286A-A)

Ref No.	Part No.	Description	Q'ty
IC504	051-0350-55	IC (NJM4558)	1
IC503	051-0743-70	IC (BASS/TRE.-MAX.)	1
Q511,512,513, 514	103-1504-00	Transistor (2SD1504)	4
Q503,504,508	103-2458-00	Transistor (2SC2458)	3
C709	171-1033-06	Ceramic capacitor (0.01μF)	1
C517,518	171-1832-06	Ceramic capacitor (0.018μF)	2
C523,524,534, 535	182-1053-62	Electrolytic capacitor (50V 1pF)	4
C515,516,519, 520,521,522 532,537	182-1063-32	Electrolytic capacitor (16V 10μF)	8
C529,530	182-2243-62	Electrolytic capacitor (50V 0.22pF)	2
C538,539	182-4753-52	Electrolytic capacitor (35V 4.7μF)	2

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